

In the Claims

Please replace all prior versions of claims in the application with the following claims:

1. (Currently amended) Finger sensing apparatus comprising:
two or more finger detectors spaced apart along an expected direction of movement of a finger, each of said finger detectors including at least one drive plate and at least one pickup plate, wherein said finger detectors are dimensioned and spaced to sense a bulk of a finger rather than fingerprint features and wherein an end of a finger passing over each of said finger detectors produces a change in capacitance between respective drive plates and pickup plates;
an excitation circuit for energizing the drive plates of said finger detectors with drive signals;
a detection circuit for detecting the drive signals capacitively coupled from the drive plate to the pickup plate of each of said finger detectors to provide sensor signals; and
a processing circuit for determining a time delay between said sensor signals from said finger detectors, wherein said time delay between said sensor signals is representative of a speed of the finger.
2. (Previously presented) Finger sensing apparatus as defined in claim 1, wherein the drive plate and the pickup plate of each of said finger detectors are disposed generally laterally with respect to the expected direction of movement of the-finger.
3. (Previously presented) Finger sensing apparatus as defined in claim 1, wherein the pickup plates of said finger detectors are commonly connected.
4. (Previously presented) Finger sensing apparatus as defined in claim 1, wherein each of said finger detectors includes first and second pickup plates disposed on opposite sides of the drive plate to form a differential sensor.

5. (Previously presented) Finger sensing apparatus as defined in claim 4, wherein the drive plates of said finger detectors are commonly connected.

6. (Cancelled)

7. (Previously presented) Finger sensing apparatus as defined in claim 1, wherein the drive plates and the pickup plates of said finger detectors are curved to substantially match the curve of a typical finger end.

8. (Previously presented) Finger sensing apparatus as defined in claim 1, further comprising a substrate, wherein said drive plates and said pickup plates comprise conductive traces on said substrate.

9. (Previously presented) Finger sensing apparatus as defined in claim 1, further comprising a flexible substrate, wherein said drive plates and said pickup plates comprise conductive traces on said flexible substrate.

10. (Previously presented) Finger sensing apparatus as defined in claim 8, wherein said substrate comprises a printed circuit board.

11. (Cancelled)

12. (Currently amended) Finger sensing apparatus as defined in claim ~~4~~1, wherein said drive signals comprise signal bursts.

13. (Previously presented) Finger sensing apparatus as defined in claim 12, wherein said signal bursts comprise bursts of a clock signal.

14. (Previously presented) Finger sensing apparatus as defined in claim 12, wherein said detection circuit comprises a synchronous detector.

15. (Cancelled)

16. (Previously presented) Finger sensing apparatus as defined in claim 1, wherein the drive plate and the pickup plate of each of said finger detectors are substantially coplanar.

17. (Currently amended) Finger sensing apparatus as defined in claim ~~14~~1, wherein the drive signals are applied to said finger detectors sequentially.

18. (Currently amendment) A fingerprint sensing system comprising:

an image sensor comprising an array of sensors for sensing ridge peaks and ridge valleys of a fingerprint; and

a finger sensor comprising two or more finger detectors spaced apart along an expected direction of movement of a finger, each of said finger detectors including at least one drive plate and at least one pickup plate, wherein said finger detectors are dimensioned and spaced to sense a bulk of a finger rather than fingerprint features and wherein an end of a finger passing over each of said finger detectors produces a change in capacitance between respective drive plates and pickup plates;

an excitation circuit for energizing the drive plates of said finger detectors with drive signals;

a detection circuit for detecting the drive signals capacitively coupled from the drive plate to the pickup plate of each of said finger detectors to provide sensor signals; and

a processing circuit for determining a time delay between said sensor signals from said finger detectors, wherein said time delay between said sensor signals is representative of a speed of the finger.

19. (Previously presented) A fingerprint sensing system as defined in claim 18, wherein the image sensor and the finger sensor are fabricated as conductive traces on a substrate.

20. - 24. (Cancelled)